May 2009 Monthly Report

During the month of May three notable activities took place. They include the presentation of the GTAS Technical Review for NOAA's Global Systems Division; deployment site visit to Texas and third, development on the GTAS Client and Server.

GTAS Technical Review

Each project in Global Systems Division must undergo Technical Review within several months of the start of the project, and every two years thereafter should the project continue. A GTAS Technical Review was given on May 5th, 2009 before the Technical Review Committee which consists of laboratory scientists and engineers. The purpose of the Review is for the committee to summarily evaluate the project for the Division Director. The committee evaluates the Project for various criteria including its purpose, relevance to NOAA and technical merit. Both Mike Donovan and Ray Kent attended the Review here in Boulder. Slides from the Technical are posted on the GTAS web site.

Texas Deployment Site Visit

GTAS staff traveled to Texas to begin the installation process at the FT Worth Weather Forecast Office, Dallas EOC and Texas State EOC. During the visit, GTAS client software was demonstrated and installed at both the WFO and Dallas EOC. Work was completed to develop, test and establish client/server communications through each firewall at those sites. The system was also demonstrated at the Texas State EOC in Austin. The state requested that the client software installation occur in late June or early July due to their current heavy workload.

Technical Development

- The toxic plume GUI on the GTAS client has been updated to include new chemical parameters for selection by the emergency manager. This includes chemical type (if known), rate of release (single release or continuous), chemical particle, gas or liquid (if known). If this information is not known, the user can initiate a toxic plume model run and GTAS will use established default criteria for the dispersion display.

- We began experimental runs of the mesoscale atmospheric data for the initialization of the toxic plume model on our high-performance computer. This includes the 2-km gridded wind, moisture and stability information on the small-scale domain over the Dallas/FT Worth area. Software development also began to ingest the mesoscale model data into the GTAS Server.

- Initial development has been completed to give the GTAS user interface flexibility to handle various attributes of GIS shape file data. This allows the emergency manager to click on and off on specific types of data including hospitals, schools, roads (interstate, highway, neighborhood) data and other GIS information. Additionally, and automatic de-clutter capability has been added to the user interface. The emergency manager can

use middle or left mouse clicks to zoom in and out of the image on the display. The automatic de-clutter gives the user “progressive disclosure” of additional data with every zoom factor. Labeling shape files for both lines (streets, railroads) and polygons (county boundaries) have been added. We also modified code that allows us to create a GTAS client with many types of products and capabilities for advanced users and a more simplified client for users with more limited requirements. Each client will be downloadable from the GTAS web site. Additionally, the GTAS client User Guide has been updated.

- We began the development on the GTAS deployment localizations for FT Worth and State of Texas, Seattle and Washington State, Kansas City and State of Missouri, New York City and State of New York and the Washington National Capital Region. This work involves the creation of city and neighborhood scales with map backgrounds for those local area deployments (for high-resolution toxic plume imagery) and state scales with their associated map data for each state EOC deployment.

- In the event that multiple toxic releases were to occur in a single city we began to implement software that allows the user to initiate multiple plume model runs from various locations and display them all simultaneously. The user points-and-clicks on the map location where each release has occurred and starts a plume model run for each location. While all plume dispersion model runs are displayed on the GTAS client, the user can click each one “on” or “off” to de-clutter the imagery or to concentrate on one or two toxic releases at a time.